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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,063	02/28/2002	Rocco Casagrande	11641/39	7445

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EXAMINER	
NAFF, DAVID M	

ART UNIT	PAPER NUMBER
1651	

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,063	CASAGRANDE ET AL.	
	Examiner	Art Unit	
	David M. Naff	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2006 and 27 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *197,199,200 and 202-214* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *197, 199, 200 and 202-214* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/17/06 has been entered.

An amendment of 4/17/06 amended the specification, canceled claims 1-196 and 198, and amended claims 197, 203 and 208.

A preliminary amendment of 4/27/06 amended claims 197, 203 and 208.

Claims examined on the merits are 197, 199, 200 and 202-214.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Specification

The disclosure is objected to because of the following informalities: the specification at page 32, line 22, and other places refers to magnetic receptacles 511. However, Figure 5 does not contain "511" as a label designating magnetic receptacles.

Response to Arguments

An amendment of 4/17/06 states (first paragraph, page 8) that a corrected sheet has been submitted containing Figure 5 where magnetic receptacles "511" has been added to the figure. However, a corrected

sheet of drawing was not attached to the amendment, and the corrected sheet has not been received.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 197, 199, 200 and 202-214 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Support is not found in the specification for "magnetic receptacles is situated in, on or associated with said substrate" as required bridging lines 6 and 7 of claim 197.

The sections of the specification applicants cite as providing support have been reviewed. However, the sections do not recite the alternatives "in, on or associated with", and adequate support is not found for these alternative of how the magnetic receptacles are situated with the substrate.

Claim Rejections - 35 USC § 112

Claims 197, 199, 200 and 202-214 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 197 (line 6), the meaning and scope is uncertain of "associated with" in regard to how the magnetic receptacles are situated in relation to the substrate. Being associated with is relative and subjective, and it would be uncertain when receptacles are associated with and not associated with the substrate. This also applies to "cells are associated with magnetic material" (bridging lines 8 and 9).

Claim 197 (line 5, and bridging lines 9 and 10) is confusing by requiring cells within the magnetic receptacles" since structure of the magnetic receptacles has not been set forth that will allow cells to be immobilized "within" the magnetic receptacles. This also applies any other claims requiring cells in the receptacles.

Claim 203 and claims dependent thereon are confusing and unclear as to structure that is a cell isolation device and how the device is mated with the substrate to isolate cells. Insufficient structure of the cell isolation device and how it is mated to the substrate has been provided in the claims to enable one to know structure of a cell isolation device used according to the claims.

In line 2 of claim 203, "matching periodicity" is uncertain as to meaning and scope. Having matching periodicity is relative and

subjective, and it is uncertain as to how one would know when periodicity exists, and is matching and not matching.

In line 1 of claim 204, requiring wells of the cell isolation device is confusing since the device has not been previously required to have wells. Additionally, it is uncertain how the wells function for cell isolation in relation to the magnetic receptacles.

Claim 207 is unclear as to structure of the cell separation device that allows separation of the device from the substrate while cells remain in the cell isolation device.

Claim 208 is unclear as to structure of a cell isolation device that enables it to be mated to the receptacles and function in relation to centrifugal force as claimed.

Claim 214 is unclear as to material that is a highly permeable magnetic material. How one would know when a material is highly permeable and not highly permeable is uncertain. Being "highly" is relative and subjective.

Response to Arguments

The amendment to claim 203 requiring the cell isolation device to have matching periodicity with the receptacles, and the cell isolation device to isolate cells in one receptacle from cells in other receptacles does not define structure of the cell isolation device and how it is mated to the substrate so one will know structure of a device within and not within the scope of the claim that functions for cell isolation. Furthermore, it is uncertain as to the relationship

between the cell isolation device and the receptacles defined by "matching periodicity".

Additionally, the amendments to claim 208 do not make clear structure of the cell isolation device and how it is mated to the magnetic receptacles such that cells can be transferred by centrifugal force as claimed.

Since the claims are drawn to a device, sufficient structure and relationship of structural components must be defined to enable one to know structure used within the scope of the claims, not within the scope of the claims.

While claim amendments have overcome some indefiniteness, the claims are still indefinite for reasons set forth above.

Claim Rejections - 35 USC § 103

Claims 197, 199, 200, 202-204 and 207-214 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ekenberg et al (5,567,326) in view of Dolan et al (6,136,182) and Liberti et al (6,013,532), and if necessary in further view of Zborowski et al (5,968,820) for reasons in the previous office action of 11/15/05 and for reasons herein.

The claims are drawn to a device for arraying a plurality of cells into descrete and predetermined locations for further experimentation. The device comprises a substrate having a plurality of magnetic receptacles, wherein each of the receptacles have a localized magnetic field gradient localized to immobilize about one to about five cells within each of the magnetic receptacles situated in, on or associated with the substrate in a predetermined location

discrete from other of the plurality of magnetic receptacles, and the cells are associated with magnetic material at the time the cells are immobilized within the plurality of magnetic receptacles, and the magnetic receptacles are disposed in a two-dimensional array on the substrate.

Ekenberg et al disclose an apparatus for separating magnetically responsive particles. The apparatus contains an array of containers such as a multi-well plate, a plurality of magnetically responsive pins in a pin plate that form a pin array, and a planar magnet pack above the pin plate. The pins are inserted in the wells, and are caused by the magnet pack to create a magnetic field that separates cells in a medium in the wells due to magnetically responsive particles attached to the cells (col 7, lines 8-27 and col 8, lines 1-40).

Dolan et al disclose a magnetic device for examination and manipulation of cells having magnets configured to provide a vertically-directed gradient so that magnetically-labeled cells are collected on an interior surface of a vessel in an ordered array. For example, see col 6, line 30 to col 7, line 40.

Liberti et al disclose magnetic immobilization and manipulation of cells. A fluid medium is placed in a vessel having a ferromagnetic capture structure including an elongated linear collection surface. The vessel is placed into a magnetic field for inducing a magnetic gradient in a region along the collection surface. Magnetically-labeled cells are attracted toward the collection surface and

immobilized thereon in a linear array. For example, see the abstract and cols 5, 6 and 7.

It would have been an obvious to modify the apparatus of Ekenberg et al by replacing the pins with magnets below each well of the multi-well plate so that cells labeled with magnetically responsive particles are drawn to and immobilized on the bottom surface of each well as suggested by Dolan et al using magnets configured to provide a vertically-directed gradient so that magnetically-labeled cells are collected on an interior surface of a vessel in an ordered array, and Liberti et al placing a vessel into a magnetic field for inducing a magnetic gradient in a region along a collection surface where magnetically-labeled cells are attracted toward the collection surface and immobilized thereon in a linear array. One would have been motivated to make this modification to provide immobilized cells in a condition to be observed and further analyzed as in Dolan et al and Liberti et al. The wells of the apparatus of Ekenberg et al are micro-wells inherently capable of immobilizing one to five cells. The conditions of dependent claims would have been matters of obvious choice depending merely on individual preference in view of the disclosures of the references. The wells of the apparatus of Ekenberg et al can be considered wells of an isolation device as required by claim 204. Providing micro holes in the bottom and wall of the wells would have been obvious for fluid flow. The wells will be inherently moved when the apparatus of Ekenberg et al is moved as in claim 207. The wells of the apparatus of Ekenberg et al are inherently capable of

cells being transferred by centrifugal force as in claim 208. Zborowski et al further disclose magnetic separation of cells, and if needed, would have further suggested conditions that can be used.

Response to Arguments

Applicants urge that the references fail to suggest the limitation of a magnetic field gradient localized to immobilize "one to about five cells" in a discrete and predetermined location of the magnetic receptacle. However, the multi-well plate of Ekenberg et al contains micro wells that are sufficiently small to immobilize only one to about five cells. When each well holds only one to about five cells, the magnetic field will inherently be localized to immobilize one to about five cells when magnets are placed below the micro-wells as set forth above. Each micro-well contained by the plate of Ekenbery et al is at a discrete and predetermined location.

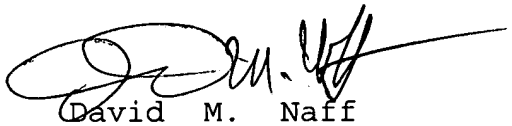
Conclusion

Claims 205 and 206 are free of the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is 571-272-0920. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David M. Naff
Primary Examiner
Art Unit 1651

DMN
6/24/06